
Illinois Department of Transportation
Community Advisory Group (CAG) Meeting #4
May 22nd, 2012
McHenry County College
Shah Center
ILLINOIS
31
Illinois Route 31
ROUTE 176 TO ROUTE 120
www.ILRoute31.com
McHenry County

Introductions

- Illinois Department of Transportation
- STV Incorporated & Sub-Consultants
- Community Advisory Group Members
  - » Please refer to list provided in Binder.
  - » Introduce yourself and state the community in which you live and/or which group and/or government agency you represent.

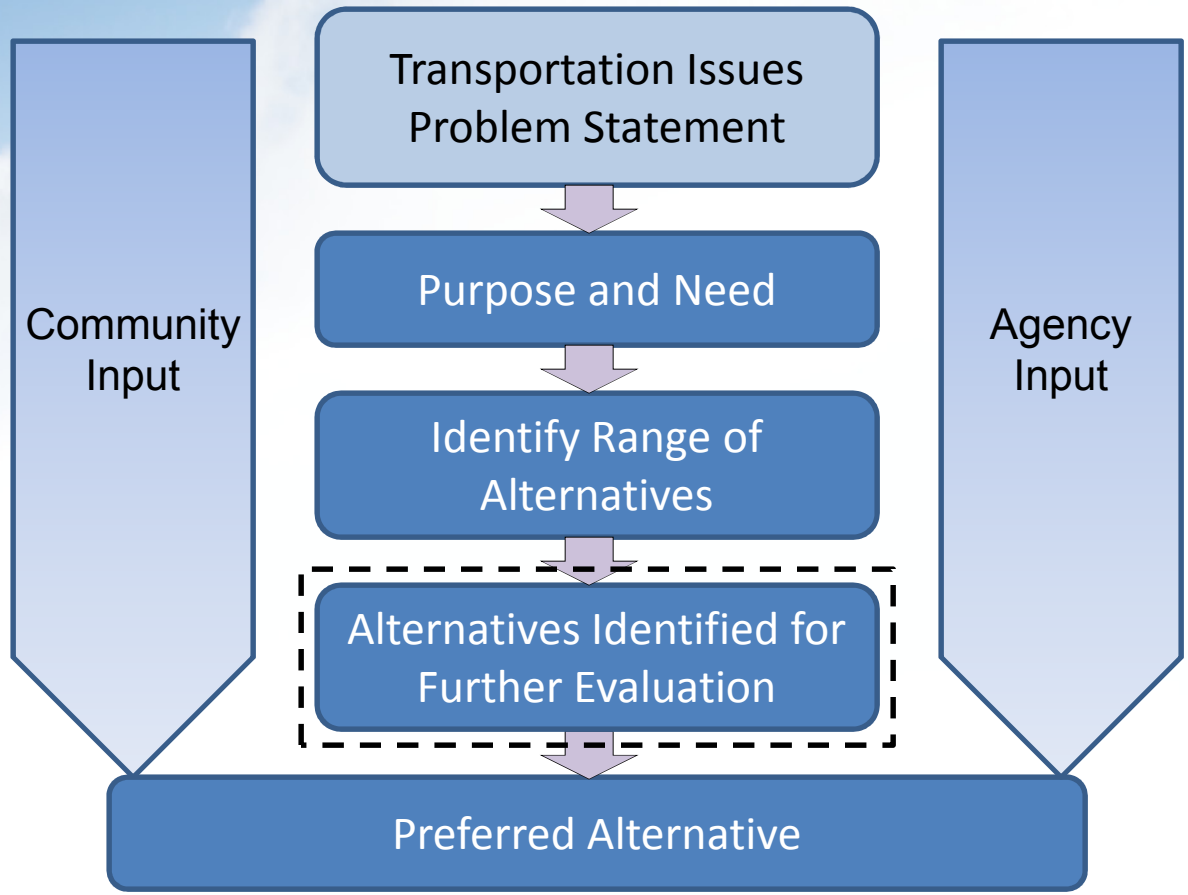
Meeting Agenda Overview & Housekeeping Items

- Meeting Agenda Overview
  - » CAG Meeting #3 Overview
  - » Review of Project Problem Statement & Purpose & Need
  - » Review of Developed Range of Alternatives
  - » Presentation of Alternatives Evaluation Findings
  - » Workshop: Alternatives to Be Carried Forward Workshop
- CAG Meeting #4 Housekeeping
  - » Meeting Duration
  - » CAG Folder Handouts

Summary of CAG Meeting #3

- Reviewed Project Problem Statement
- Reviewed Project Purpose and Need
- Discuss Regional Development
- Introduce Key Findings from Previous Study and Design Alternatives
- Workshop: Alternatives to Be Carried Forward
  - » Range of Alternatives Based on CAG and PSG Input
  - » Please refer to the CAG Meeting #3 Summary documents in your binder

Project Process –Alternatives to be Carried Forward



Review of Project Purpose & Need

- NEPA Approved P&N at March, 2012 Merger Meeting
- IL Route 31 Project – Purpose

  The purpose of the proposed project is to improve safety, address roadway capacity and mobility, correct existing geometric deficiencies and encourage multi-modal transportation along IL Route 31 from the intersection of IL Route 176 to the intersection of IL Route 120, in eastern McHenry County.

- IL Route 31 Project – Needs
  - Improve Roadway Safety
  - Expand Roadway Capacity and Address Traffic Issues
  - Correct Existing Roadway Design Deficiencies
  - Improve Opportunities for Multimodal Connectivity

Range of Alternatives – South Section

- South Section (IL Route 176 to Bull Valley Road)*
  - 6-lane with 30’ & 50’ Depressed Median and 10’ Outside Shoulders
  - 6-lane with 18’-22’ Raised Barrier Median
  - 4-lane with 18’-22’ Raised Barrier Median
  - 4-lane with 18’-22’ Raised Barrier Median and 10’ Outside Shoulders
  - 5-lane with Bi-directional TWLTL
  - 4-lane with 30’ Raised Barrier Median
  - 4-lane with 30’ Depressed Median and 10’ Outside Shoulders
  - No-Build Alternative

* All options include a shelf for off-street bicycle and pedestrian accommodations

Range of Alternatives – North Section

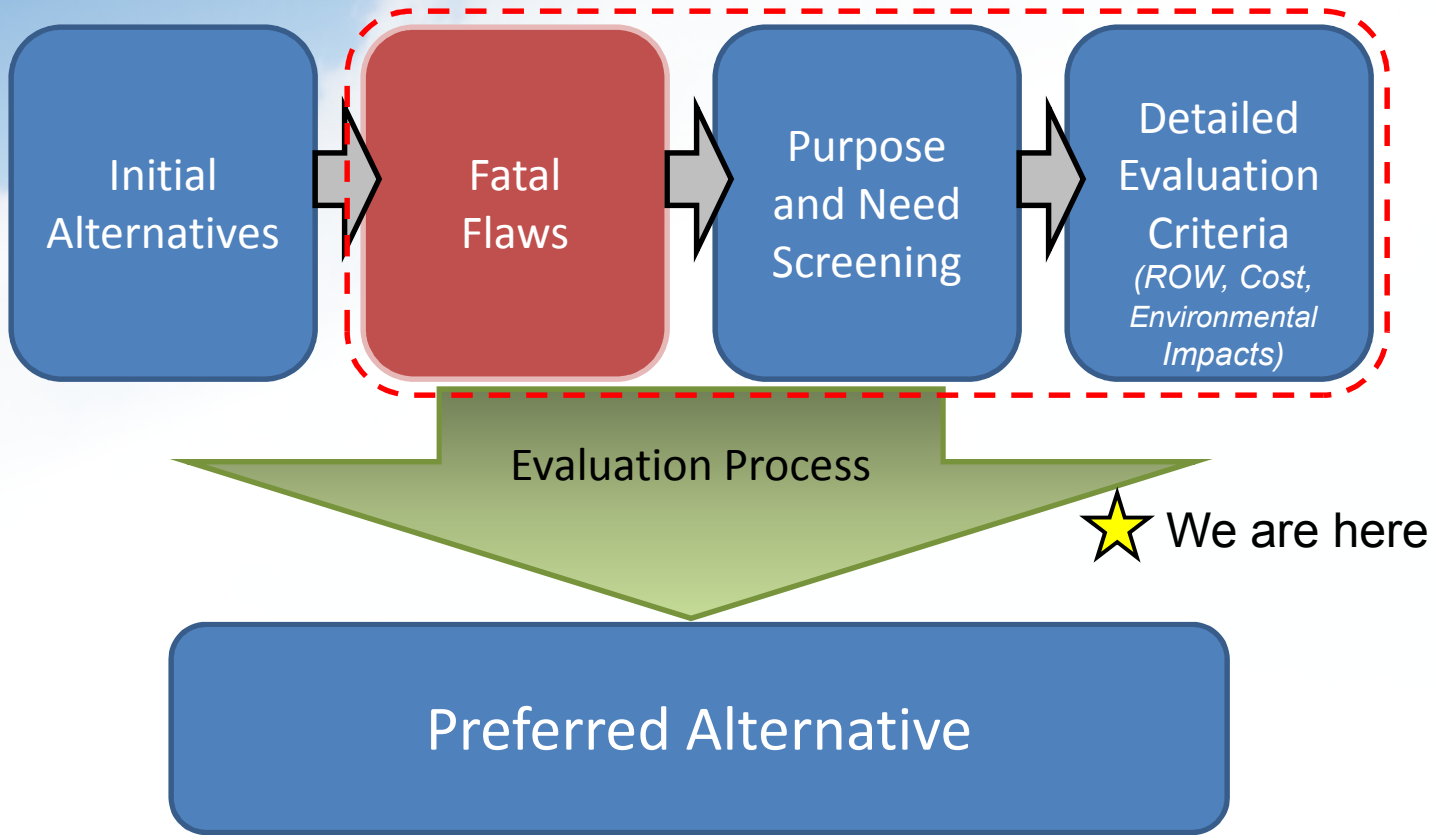
- North Section (Bull Valley Road to IL Route 120)
  - » 4-lane with 6’-8’ Landscaped/Planter Median
  - » 4-lane with 18’-22’ Raised Barrier Median
  - » 4-lane with 30’ Raised Barrier Median
  - » 5-lane with Bi-directional TWLTL
  - » No-Build Alternative

* All options were investigated with on-street bike lanes, off-street multiuse paths, elimination of on-street parking (IL 31), maintenance of on-street parking (IL 31)

Evaluation Criteria

- Meets Identified Needs
  - » Safety, Traffic and Capacity, Mobility, Pedestrian & Bicyclist Accommodations, Corrects Existing Design Deficiencies
- Environmental, Social, and Cultural Impacts
  - » Wetlands, Parks, Historic Buildings, Etc.
- Property Impacts / Right-of-way
  - » Residential, Commercial, Land Use Plans
- Construction Costs
  - » Construction, Maintenance

Alternates Development Evaluation Process



Purpose and Need Screening

- Improve Roadway Safety
  - » Improve motorist and pedestrian safety throughout the corridor
- Expand Roadway Capacity and Address Traffic Issues
  - » Improve Level of Service and Mobility
- Correct Existing Roadway Design Deficiencies
  - » Improve Roadway and Intersection Alignments
- Improve Opportunities for Multimodal Connectivity
  - » Provide Pedestrian and Bicycle Accommodations
  - » Look for ways to enhance and improve public transportation options

Safety Evaluation

- Methodology
  - » Followed 2010 Highway Safety Manual (HSM) for representative section analysis
  - » Relative comparison, not an absolute prediction of crashes
- Assumptions
  - » Existing analysis used 2009 ADT values
  - » Proposed analysis used 2040 projected ADT values
- Findings

Safety Evaluation - Findings

Segment Alternative	IL Route 31 AADT	Predicted Total Crashes / Year	Change from 2009 Existing Alternative	Change from 2040 No-Build Alternative
Typical Segment:				
2009 Existing	23,500	4.4	--	--
2040 No-Build	32,000	6.4	45% Increase	--
2040 Build with 4-lanes & a TWLTL	44,000	12.3	180% Increase	92% Increase
2040 Build with 4-lanes & a Median (Raised or Depressed)	44,000	4.2	5% Decrease	34% Decrease
2040 Build with 4-lanes, a TWLTL, and On-Street Parking	44,000	16.6	277% Increase	159% Increase
2040 Build with 4-lanes, a Median (Raised or Depressed), and On-Street Parking	44,000	5.7	30% Increase	11% Decrease

- Center median reduces crash frequency significantly versus bi-directional turn lane (TWLTL)
- Bi-directional alternative crash frequency worse than No-Build option for year 2040
- On-street parking increases crash frequency for both bi-directional and center median alternatives, with a more significant increase for the bi-directional alternative

Safety Evaluation - Summary

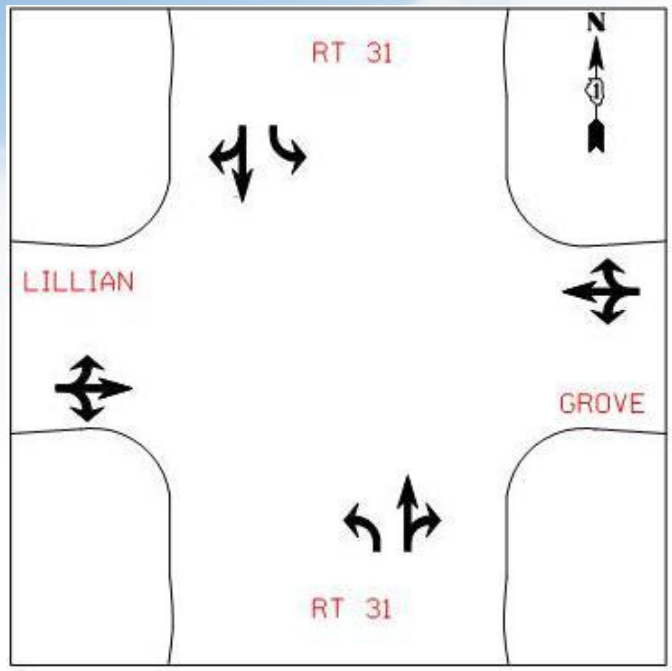
- TWLTL vs. Median
  - » TWLTL Alternative anticipated crash rate is 193% higher than the Median Alternative
  - » TWLTL Alternative anticipated crash rate is 92% higher than the No-Build Alternative
- On-Street Parking impacts
  - » On-Street Parking Alternative anticipated crash rate is 35% higher than the No On-Street Parking Alternative for both the TWLTL and Median options

Expand Roadway Capacity and Address Traffic Issues - Evaluation

- Methodology
  - » Used Highway Capacity Software (HCS) and Synchro to analyze Level of Service (LOS)
  - » Compared 2040 No-Build to Build Alternatives
  - » Range of Alternatives includes full build to minimal build options
  - » Intersection alternatives development mainly focused on Lillian/Grove and at IL Route 120
  - » Roundabout alternatives investigated at both Lillian/Grove and at IL Route 120
- Assumptions
  - » Included pedestrian volumes
- Findings

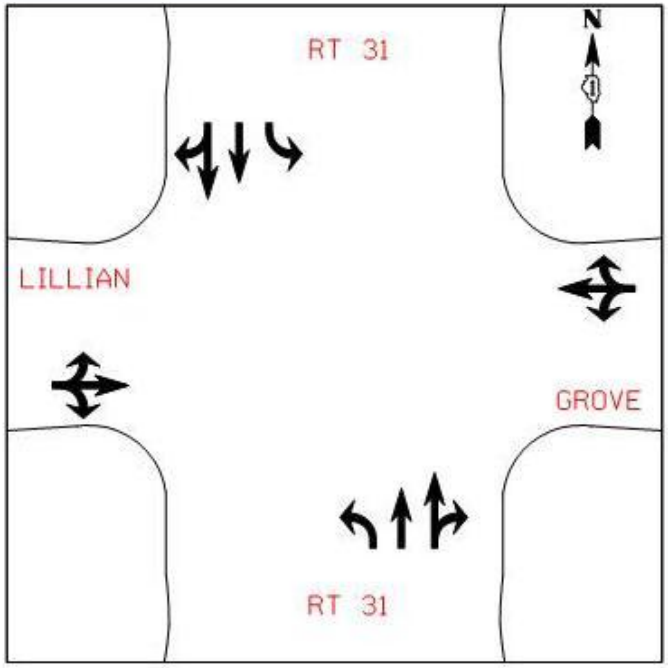
Expand Roadway Capacity and Address Traffic Issues - Findings

Lillian Street / Grove Avenue Intersection Alternatives:



ALTERNATIVE 1.0 (NO BUILD)

2040 DELAY (sec /veh)	2040 LOS
133.4 (AM)	F (AM)
99.8 (PM)	F (PM)

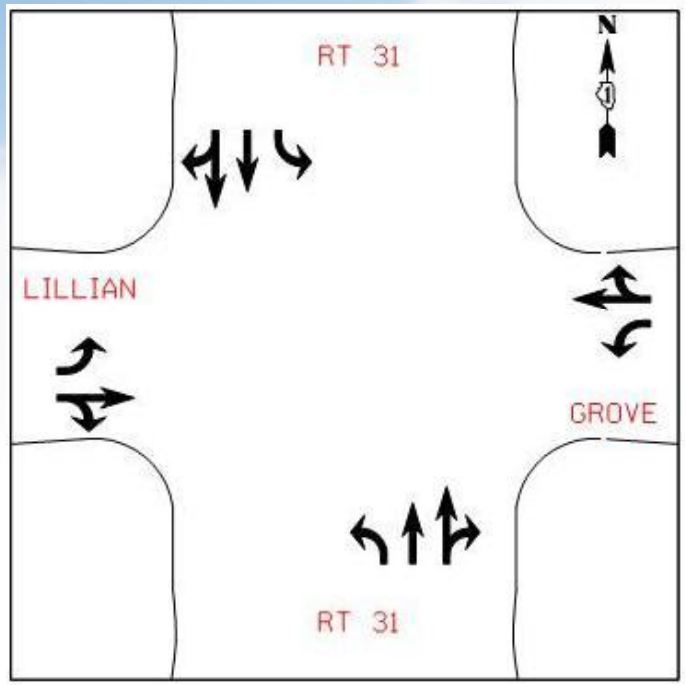


ALTERNATIVE 1.1

2040 DELAY (sec /veh)	2040 LOS
26.1 (AM)	C (AM)
22.4 (PM)	C (PM)

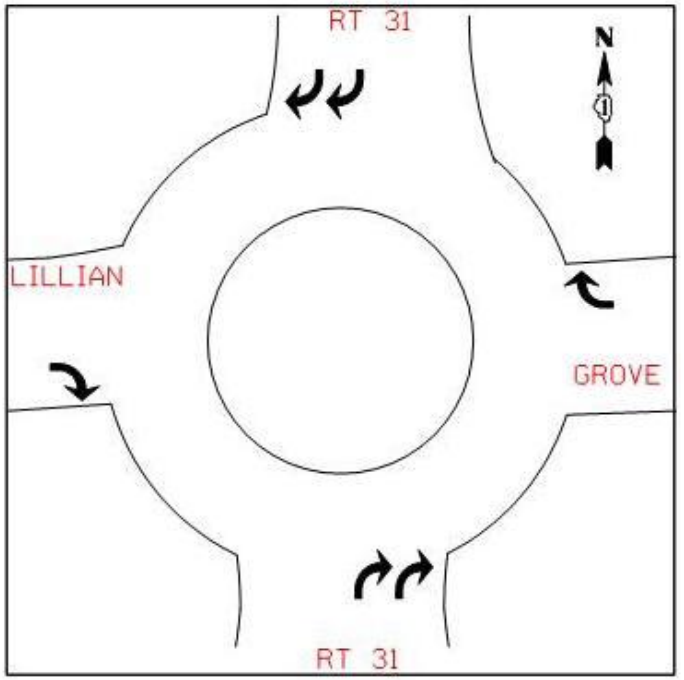
Expand Roadway Capacity and Address Traffic Issues - Findings

Lillian Street / Grove Avenue Intersection Alternatives (cont.):



ALTERNATIVE 1.2

2040 DELAY (sec /veh)	2040 LOS
19.1 (AM)	B (AM)
16.3 (PM)	B (PM)

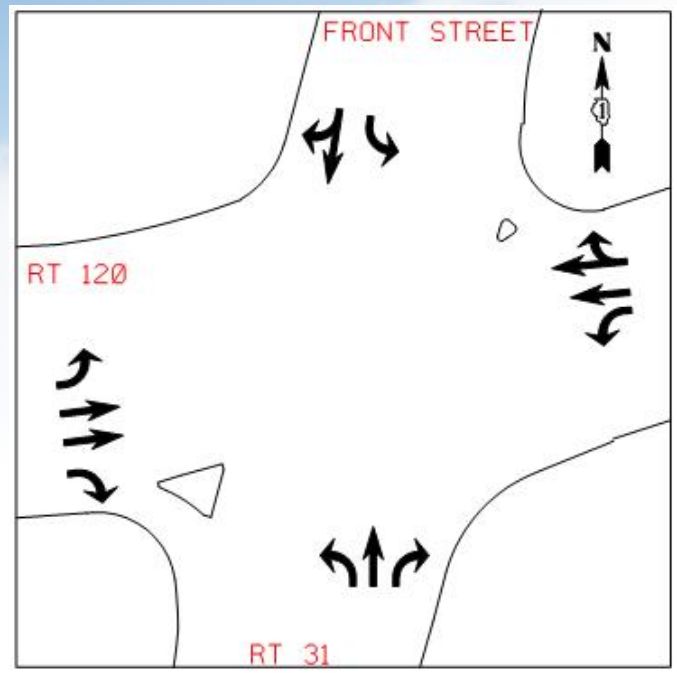


ALTERNATIVE 1.3

2040 DELAY (sec /veh)	2040 LOS
48.8 (AM)	E (AM)
38.7 (PM)	E (PM)

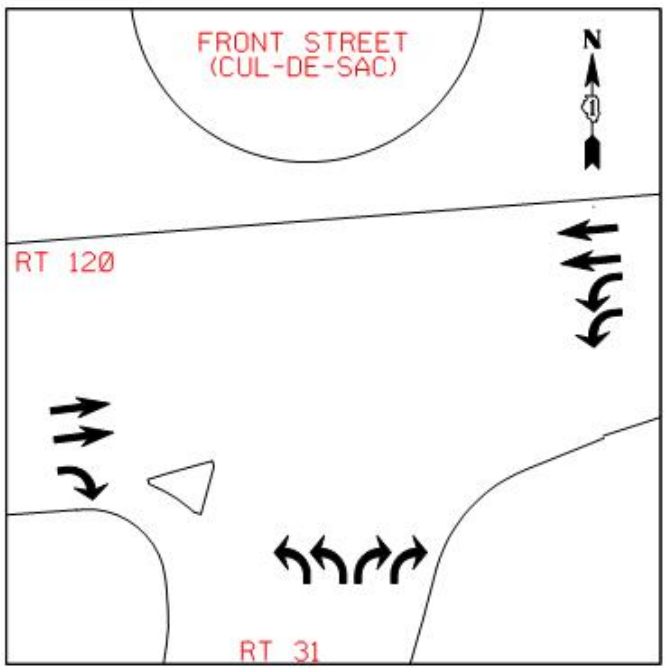
Expand Roadway Capacity and Address Traffic Issues - Findings

IL Route 120 Intersection Alternatives:



ALTERNATIVE 2.0 (NO BUILD)

2040 DELAY (sec /veh)	2040 LOS
130.5 (AM)	F (AM)
120.3 (PM)	F (PM)

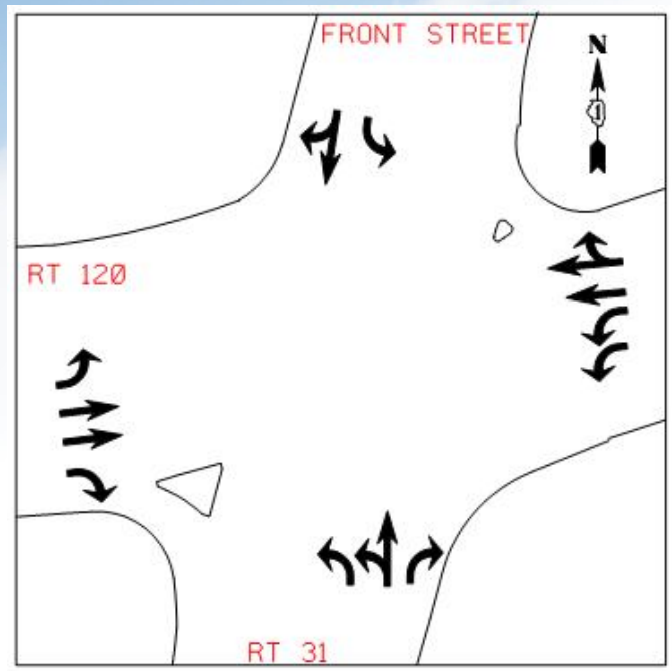


ALTERNATIVE 2.1

2040 DELAY (sec /veh)	2040 LOS
18.5 (AM)	B (AM)
17.5 (PM)	B (PM)

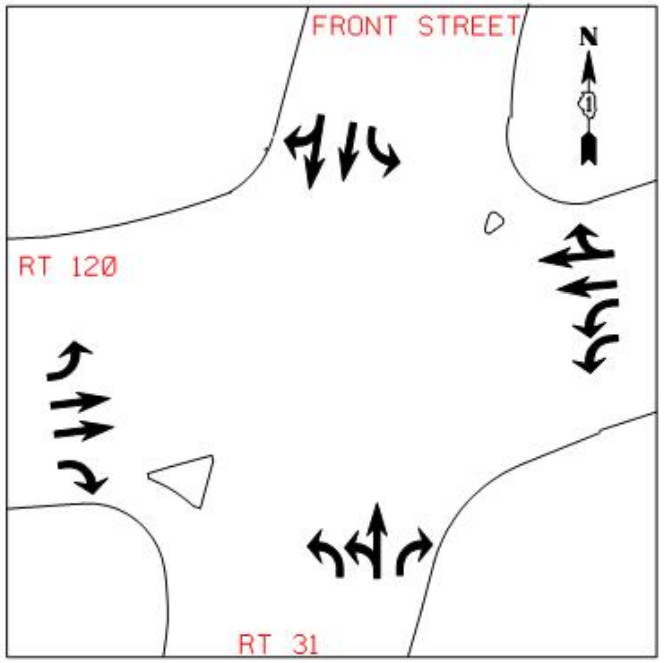
Expand Roadway Capacity and Address Traffic Issues - Findings

IL Route 120 Intersection Alternatives (cont.):



ALTERNATIVE 2.2 (Re–Stripe)

2040 DELAY (sec /veh)	2040 LOS
71.3 (AM)	E (AM)
70.8 (PM)	E (PM)

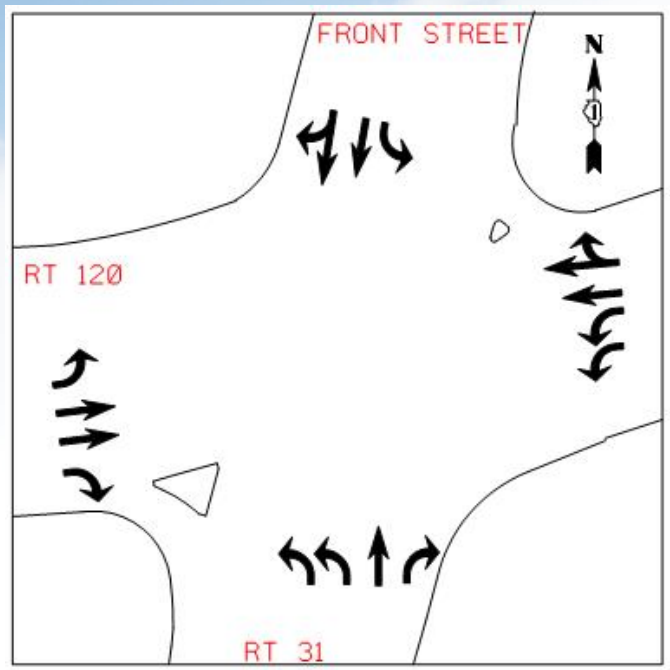


ALTERNATIVE 2.3 (Intermediate Build)

2040 DELAY (sec /veh)	2040 LOS
46.6 (AM)	D (AM)
51.9 (PM)	D (PM)

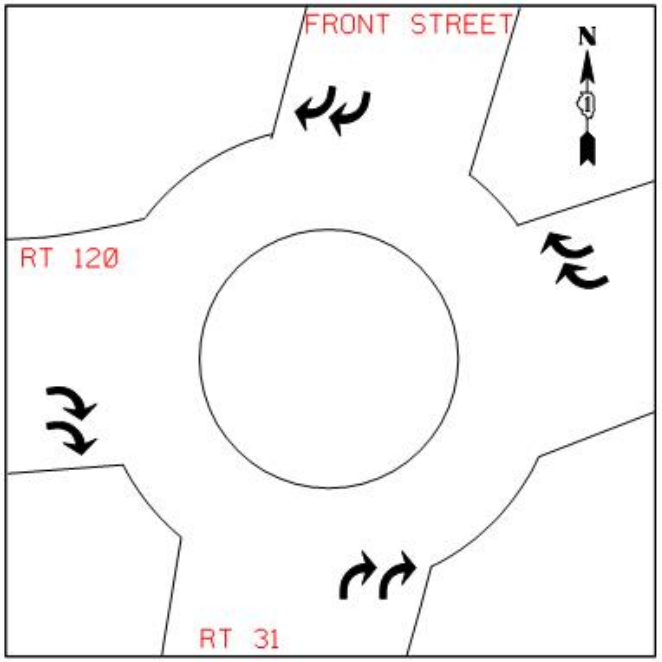
Expand Roadway Capacity and Address Traffic Issues - Findings

IL Route 120 Intersection Alternatives (cont.):



ALTERNATIVE 2.4 (Full–Build)

2040 DELAY (sec /veh)	2040 LOS
34.3 (AM)	C (AM)
35.0 (PM)	C (PM)



ALTERNATIVE 2.5

2040 DELAY (sec /veh)	2040 LOS
370.4 (AM)	F (AM)
344.5 (PM)	F (PM)

Correct Existing Roadway Design Deficiencies - Evaluation

- Methodology
  - » Evaluated existing conditions vs. proposed conditions for each alternative
- Assumptions
  - » Develop a roadway design to meet current IDOT geometric design standards
- Findings

Correct Existing Roadway Design Deficiencies - Evaluation

- Existing Design Deficiencies

South Section Deficiencies (Vertical Curves)*	
Location	Type
IL 31 at Drake Drive	Crest
470’ South of Brighton Lane on IL 31	Sag
970’ North of Half Mile Trail on IL 31	Sag
350’ South of Ames Road on IL 31	Crest

*Deficient curves impact sight distance and overall safety

Drainage Deficiencies**
Culvert North of Gracy Road
Standing water at Albany and IL 31
Half Mile Trail and IL 31
IL 31 from Anne St. to Lillian/Grove

**Deficient drainage impacts mobility and overall safety

All alternatives will address existing roadway design deficiencies; however, some deficiencies may or may not be corrected due to design constraints

Deficiencies to Potentially Remain		
Alternative	Location	Reasoning
North Section; Option #1	Intersection Sight Distance from John St. to IL 120	Correction requires the obstruction (building) to be removed
South Section; Option #1 & #2	6 (Six) Driveway Slopes/Grade are steeper than 6%	Correction would impact structure or adjacent driveway

Improve Opportunities for Multimodal Connectivity - Evaluation

- Methodology
  - » Evaluated existing conditions vs. proposed conditions for each alternative
- Assumptions
  - » Alternatives will provide accommodations for future multi-use path and sidewalk
  - » Design variances (exceptions) will need to be granted for any alternatives that do not provide for these accommodations throughout the entire study limits
- Findings

Improve Opportunities for Multimodal Connectivity - Findings

- Pedestrian and bicycle accommodations will be provided with all alternatives
- Downtown McHenry north of John St.
  - » Limited Right-of-Way
  - » Bicycle accommodations will create building impacts

*A majority of the alternatives developed north of John Street allow for the construction of a Multi-use path. However, the minimum build option does not provide for bicycle accommodations north of John Street

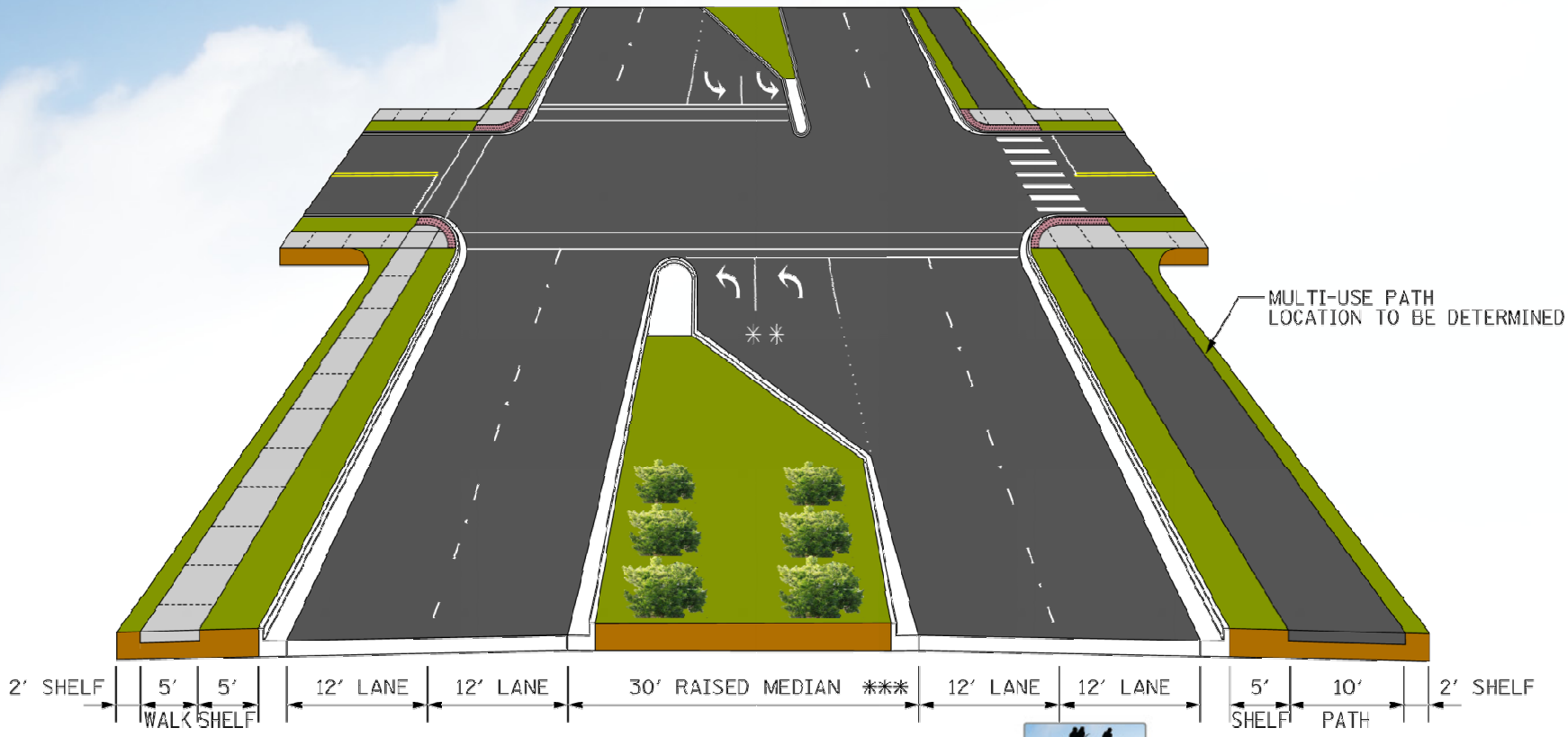
Intersections and Roadway Sections	Pedestrian/Bike Accommodations		
	Sidewalk	Multi-use Path	Crosswalks
IL Route 176	Yes	Yes	Yes
IL Route 176 to Half Mile Trail	Yes	Yes	
Half Mile Trail	Yes	Yes	Yes
Half Mile Trail to Ames Road	Yes	Yes	
Ames Road	Yes	Yes	No
Ames Road to Edgewood Road	Yes	Yes	
Edgewood Road	Yes	Yes	Yes
Edgewood Road to Gracy Road	Yes	Yes	
Gracy Road	Yes	Yes	No
Gracy Road to Veterans Drive	Yes	Yes	
Veterans Drive	Yes	Yes	Yes
Veterans Drive to Albany/Prime Parkway	Yes	Yes	
Albany/Prime Parkway	Yes	Yes	Yes
Albany/Prime Parkway to Shamrock Lane	Yes	Yes	
Shamrock Lane	Yes	Yes	Yes
Shamrock Lane to Bull Valley Road	Yes	Yes	
Bull Valley Road	Yes	Yes	Yes
Bull Valley Road to Lillian/Grove Road	Yes	Yes	
Lillian/Grove Road	Yes	Yes	Yes
Lillian/Grove Road to John Street	Yes	Yes	
John Street	Yes	Yes	No
John Street to IL Route 120	Yes	Yes/No*	
IL Route 120	Yes	Yes/No*	Yes

Alternatives to Be Carried Forward

- South Section
  - » Option #1 = 30’ Raised Median throughout
  - » Option #2 = 30’ Depressed median and 10’ outside shoulder as needed to maintain > 45MPH zones and provide water quality
  - » No-Build Option
- North Section
  - » Option #1 = Re-stripe Alternative (10’ lanes @ IL 120)
  - » Option #2 = Max Build (30’ Median @ IL 120)
  - » Option #3 = Intermediate Build (18’ Median @ IL 120)
    - Note – All three options utilize a 18’ raised barrier median from Bank Dr. to John St.
  - » No Build Option

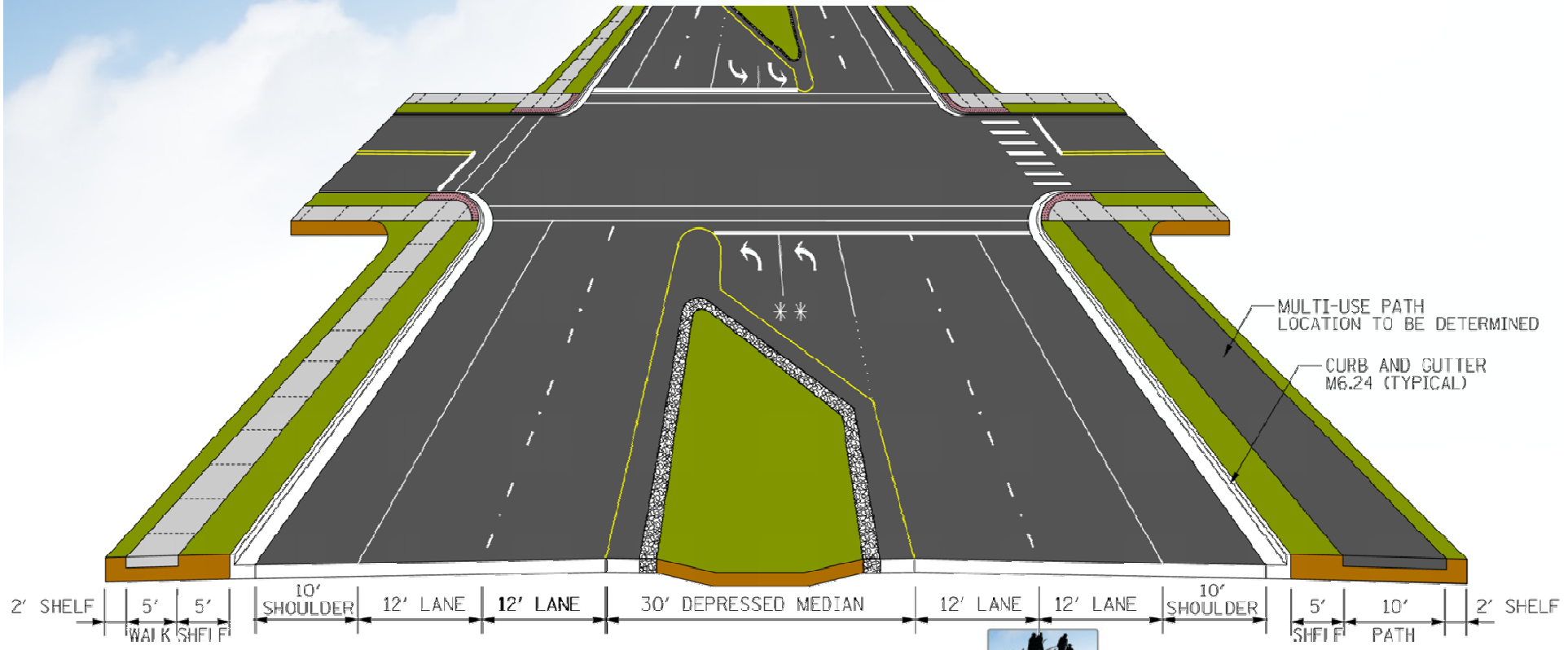
Alternatives to Be Carried Forward

- South Section – 30’ Wide Raised Median – Option #1



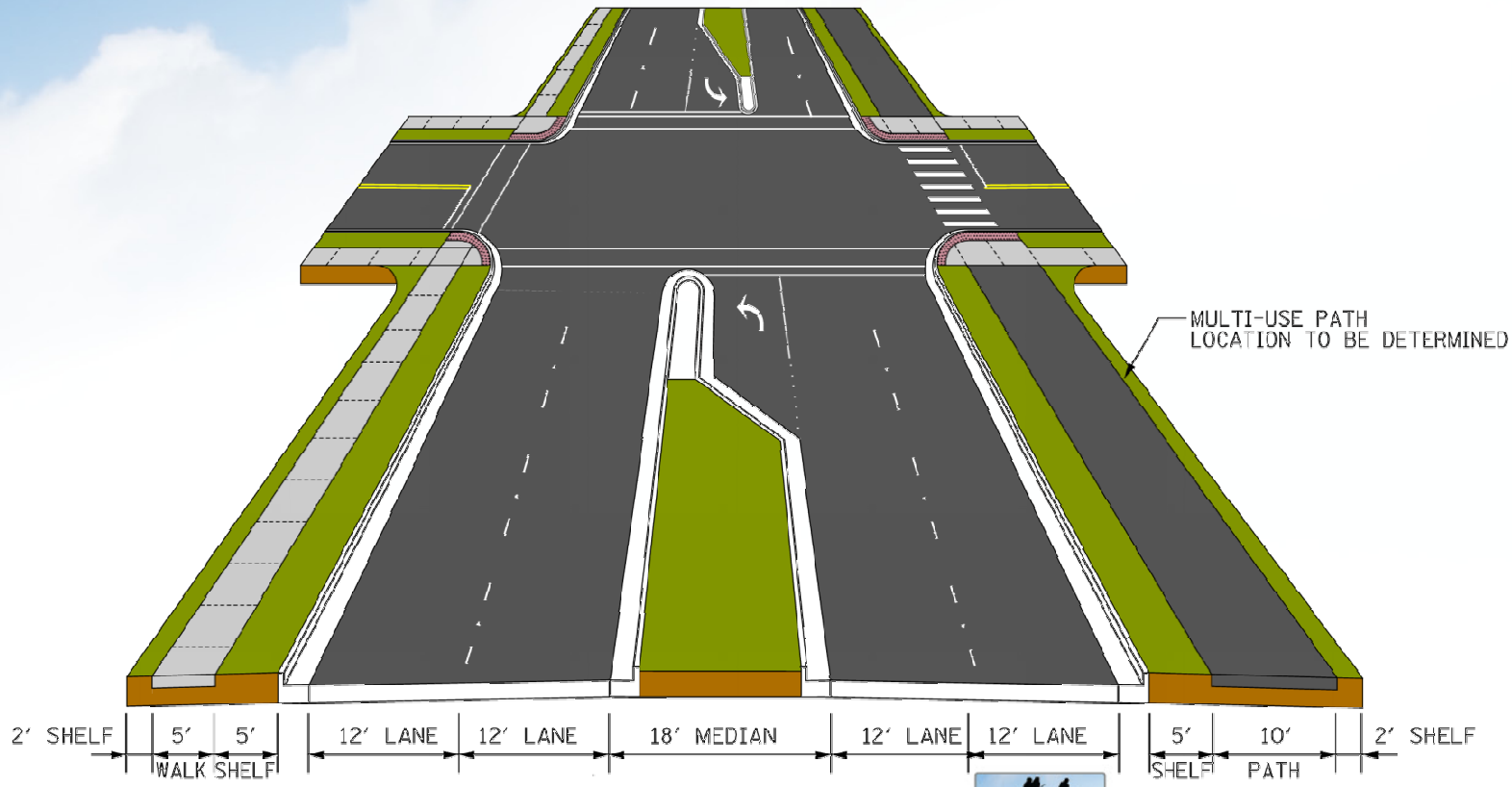
Alternatives to Be Carried Forward

- South Section – 30’ Depressed Median – Option #2



Alternatives to Be Carried Forward

- North Section – 18’ Raised Median – Options #1,2 & 3



Workshop: Alternatives to Be Carried Forward

- What will be accomplished during this workshop?
  - » Provide feedback and suggestions on the Alternatives to Be Carried Forward
  - » This input will be used to identify and develop the preferred alternative to address the Purpose and Need
  - » Identify locations of potential median breaks, U-turn locations, planned access locations and consolidated driveway entrances
- Group Exercise
  - » Provide feedback on alternatives to be carried forward (45 minutes)
  - » Reconvene by approximately 2:45 p.m.

Next Steps and Future Meetings

- Next Steps
  - » Ongoing Engineering Project Development activities:
    - » Further refinement of project alternatives
    - » Preparation for upcoming Public Meeting
    - » Preparation for NEPA/404 meeting in September, 2012
  - » Identification of a Preferred Alternative
- Future Meetings
  - » Public Meeting #2: July 2012
    - Present and obtain input on Purpose and Need and present the Range of Alternatives


Thank You!
www.ILRoute31.com
ILLINOIS
31
Illinois Department of Transportation
Illinois Route 31
ROUTE 176 TO ROUTE 120
McHenry County